

FORM PTO-1390 (REV. 11-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 33596	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5)	
				09/856842	
INTERNATIONAL APPLICATION NO. PCT/JP00/06269		INTERNATIONAL FILING DATE 13 September 2000 (13.09.00)		PRIORITY DATE CLAIMED 28 September 1999 (28.09.99)	
TITLE OF INVENTION PORTABLE TELEPHONE SET					
APPLICANT(S) FOR DO/EO/US OTSUBO, Tetsuro; MAEKAWA, Kazunori; YOKOI, Shigeki					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. 3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below. 4. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31). 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). b. <input checked="" type="checkbox"/> has been communicated by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> is attached hereto. b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4). 7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> have been communicated by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input checked="" type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)). 9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 					
Items 11 to 20 below concern document(s) or information included:					
<ol style="list-style-type: none"> 11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input type="checkbox"/> A FIRST preliminary amendment. 14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 15. <input type="checkbox"/> A substitute specification. 16. <input type="checkbox"/> A change of power of attorney and/or address letter. 17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825. 18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4). 19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4). 20. <input checked="" type="checkbox"/> Other items or information: International Search Report 					

ATTORNEY'S DOCKET NUMBER
33596

21. ☒ The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):

Neither international preliminary examination fee (37 CFR 1.482)
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO
and International Search Report not prepared by the EPO or JPO. \$1000.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO	\$860.00
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International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO	\$710.00
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International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4)	\$690.00
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International preliminary examination fee (37 CFR 1.482) paid to USPTO
and all claims satisfied provisions of PCT Article 33(1)-(4) **\$100.00**

ENTER APPROPRIATE BASIC FEE AMOUNT =

CALCULATIONS PTO USE ONLY

\$ 860.00

\$ _____

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
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Total claims	8 - 20 =	0	x \$18.00
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Independent claims	1 - 3 =	0	x \$80.00
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MULTIPLE DEPENDENT CLAIM(S) (if applicable)	+ \$270.00
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TOTAL OF ABOVE CALCULATIONS =

☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.

SUBTOTAL =

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)).

TOTAL NATIONAL FEE =

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **\$40.00** per property +

TOTAL FEES ENCLOSED =

Amount to be refunded:	\$
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- a. ☒ A check in the amount of \$ 900.00 to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.
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- d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Michael W. Garvey
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Cleveland, Ohio 44114-1484

SIGNATURE

Michael W. Garvey

NAME _____

35878

REGISTRATION NUMBER

<Title of the Invention>

5

The present invention relates to a portable telephone set and in particular to a portable telephone set equipped with the internet connection function.

A related art portable telephone set equipped with the internet connection function and/or facsimile function is known. An example of a portable telephone set equipped with the internet connection function and/or facsimile function will be explained below.

1

communications. The user can communicate with a distant party via the portable telephone function while checking the position of his/her car via the car navigation function.

The "portable telephone set equipped with the facsimile function" disclosed in the Japanese Patent Publication No. 10-112765/(1998) is a portable telephone set that ensures easy facsimile communications. In the dial information memory provided in the telephone set circuit, name information on a plurality of persons and corresponding home telephone numbers, portable telephone numbers, and facsimile numbers are registered. In the facsimile mode, the name information with the facsimile information registered is displayed on input display unit apart from the remaining name information.

The related art portable telephone set had a problem that the linkage between the internet connection function and the telephone function was not good thus resulting in poor operability for the user of a portable telephone set.

The invention has been proposed to solve the aforementioned problems with the related art and aims at providing a portable telephone set with easy operability by supporting a linkage between the telephone function and the internet connection function.

<Disclosure of the Invention>

In order to solve the problems, a portable telephone set

according to the invention comprises internet connection means,
call means, call connection request acceptance means, and
control means for starting a call by controlling the call means
depending on signals from the call connection request acceptance
5 means indicating call termination or call origination during
internet connection. Via this configuration, it is possible
to make conversation while referring to or sending internet
information.

Preferably, a portable telephone set according to the
10 invention comprises means for converting received internet
information to a facsimile signal which is then output to an
external component. Via this configuration, it is possible
to know an unanswered terminating call via the internet.

Preferably, a portable telephone set according to the
15 invention comprises means for automatically originating to a
prespecified mail address in case an incoming call is not
answered. Via this configuration, it is possible to know the
unanswered incoming call event via the internet.

Preferably, a portable telephone set according to the
20 invention comprises means for notifying the mail address of
a person that has attempted the unanswered call of another
contact used in case the incoming call to the portable telephone
set is not answered. Via this configuration, it is possible
to send a mail that notifies the distant party of another contact
25 in case a terminating call is not answered.

Preferably, a portable telephone set according to the invention comprises means for reading off internet information as a voice. Via this configuration, it is possible to hear the acquired internet information as a voice.

5 Preferably, a portable telephone set according to the invention comprises timer means, image input means, voice input means, and means for sending the information around the portable telephone set to the internet every specific interval. Via this configuration, it is possible to cyclically send
10 information such as voices and images to the internet.

Preferably, a portable telephone set according to the invention comprises image input means, voice input means, and means for sending information around the portable telephone set to the internet according to a request from outside. Via
15 this configuration, it is possible to send information such as voices and images to the internet in response to a request from outside.

Preferably, a portable telephone set according to the invention comprises means for sending via facsimile another
20 contact used in case a call is not answered by a portable telephone set to the facsimile number of a person that has attempted the unanswered call. Via this configuration, it is possible to notify the distant party of an unanswered terminating call via facsimile.

25

<Brief Description of the Drawings>

Fig. 1 is a block diagram showing the configuration of a portable telephone set according to the embodiment of the invention;

5 Fig. 2 shows an example of a directory in the portable telephone set according to the embodiment of the invention;

Fig. 3 is a flowchart explaining the mail sending operation triggered when a terminating call to a portable telephone set according to the embodiment of the invention is not answered;

10 Fig. 4 is a flowchart explaining the facsimile sending operation triggered when a terminating call to a portable telephone set according to the embodiment of the invention is not answered.

In the figures, 1 represents internet information transmission/reception means, 2 call means, 3 call connection request acceptance means, 4 telephone number/e-mail address storage means, 5 system control means, 6 internet information display means, 7 output means to facsimile, 8 internet information storage means, 9 key input means, 10 a display, 15 11 reading-off means, 12 timer means, 13 image input means, 20 and 14 voice input means.

<Best Mode for Carrying Out the Invention>

The embodiment of the invention will be detailed referring to Figs. 1 through 4.

25

(Embodiment)

The embodiment of the invention is a portable telephone set that allows conversation while connected to the internet, reading-off or facsimile transmission of received internet information, transmission of image information and audio information around the portable telephone set to the internet, and notification of the mail address or facsimile number of the distant party of another contact, etc. in case a terminating call is not answered.

Fig. 1 is a functional block diagram of a portable telephone set according to the embodiment of the invention. In Fig. 1, internet information transmission/reception means 1 is means for transmitting/receiving internet information via suitable protocol such as TCP/IP protocol. Call means 2 is means for transmitting/receiving sound signals. Call connection request acceptance means 3 is means for accepting call origination requests or call termination requests. Telephone number/e-mail address storage means 4 is a memory as a directory mail address book. System control means 5 is means for performing centralized control of the entire system. Internet information display means 6 is apparatus for converting mail/home page data to display data. Output means to facsimile 7 is means for converting data to a facsimile signal and sending the facsimile signal. Internet information storage means 8 is a memory for storing received internet information. Key

input means 9 is a keyboard for entering telephone numbers, etc. Display 10 is a display unit such as a liquid crystal display. Reading-off means 11 is means for converting text information to a sound signal. Timer means 12 is an interval
5 timer for generating signals every specific interval. Image input means 13 is a still camera or a video camera. Voice input means 14 is a microphone.

Fig. 2 shows an example of a directory in the portable telephone set according to the embodiment of the invention.

10 Fig. 3 is a flowchart explaining the mail sending operation triggered when a terminating call to a portable telephone set according to the embodiment of the invention is not answered. Fig. 4 is a flowchart explaining the facsimile sending operation triggered when a terminating call to a portable telephone set
15 according to the embodiment of the invention is not answered.

Operation of the portable telephone set configured as mentioned earlier according to the embodiment of the invention will be explained. First, transmission/reception on internet information will be explained. Internet information is
20 sent/received via the internet information transmission/reception means 1 in Fig. 1. The received information is stored in the internet information storage means 8 then displayed via the display 10. To browse internet information successively, the procedure is repeated. In case
25 an incoming call terminates, the call connection request

acceptance means 4 accepts the connection request. When the connection request is accepted, conversation starts by the call means 2 by way of the system control means 5. Thus, by performing internet communications while being engaged in a call, conversation referring to the internet information is allowed. Voice communications is allowed while referring to and updating internet information.

Next, operation of outputting internet information to a facsimile via the output means to facsimile 7. The internet information stored in the internet information storage means 8 is sent in a format that can be received by a facsimile via output means to facsimile 7. The facsimile format may be a standard output format that can be recognized by for example a G3 or G4 facsimile, etc. Alternatively, the format may be any means for outputting a printed image via a network. For example, the format may be output as a script and data for controlling a printer. The format may be output as a printed image on an ordinary printer. In any case, by providing means for allowing output as a printed image, the user can output a printed image on the spot while browsing internet information, thereby considerably enhancing the operability.

In the third place, operation of converting the acquired internet information to voice data via the reading-off means 11 will be explained. Text information of the internet is output from the receiver or a speaker of a portable telephone set as

a voice. For voice regeneration in a call, a voice to be sent to the distant part is also mixed as well as the receiving voice so that internet information can be provided to the distant party as audio information. It is thus possible to provide
5 the distant party with internet information while conversation is in progress.

In the fourth place, operation of sending image information and audio information on a routine basis via the timer means 12, image input means 13 and the voice input means
10 14 will be explained. The timer means issues a information transmission request to the system control means every specific interval. Correspondingly, the system control means acquires the situation around the portable telephone set via the image input means and the voice input means, controls the internet
15 information transmission/reception means and sends the information to a preset destination on the internet. Trigger for transmission of information may be for example drop of residual battery power of the portable telephone set or variation in field strength monitored by the portable telephone set and
20 resulting constant level above predetermined value, as well as an interval-based request from the timer. In response to a request from outside, the situation around the portable telephone set is acquired via the image input means and the voice input means, which information is sent to a requesting
25 distant party or a preset internet destination as image (still

image and moving picture) information and audio information via the internet information transmission/reception means. A request from the outside may be any desired form. For example, a terminating call to the portable telephone set may be used
5 as a trigger. Or reception of a message service or an e-mail may be used as a trigger.

In the fifth place, operation in response to an unanswered incoming call is explained. In case an incoming call to a portable telephone set is not answered by the user of the portable
10 telephone set, the telephone number of the caller and the event of the unanswered call are sent to an e-mail address preset by the user of the portable telephone set. In case information corresponding to the calling number is present in the telephone number/e-mail address storage means 4, the information is also
15 sent. Such information includes for example the name of a person, facsimile number, e-mail address and home page address. A function may be added whereby the sender information of the received message and text message contents are sent to an e-mail address preset by the user of the portable telephone set also
20 when a text message service is received.

In the sixth place, operation via a mail in response to an unanswered incoming call is explained referring to Figs. 2 and 3. In case the user of the portable telephone set does not answer the incoming call, the mail address of the person
25 that attempted the unanswered call is identified based on the

calling number notice of the originator of the unanswered call.
Information in Fig. 2 is stored in the telephone number/e-mail
address storage means in the portable telephone set. In case
the number information of the distant party at call termination
5 is 03-333-3333, the corresponding mail address yamada@kkk.jp
is read, to which an e-mail is sent. The contents of the e-mail
may be any message to the person that attempted call termination.
For example, means for contact is reported such as the telephone
number of another contact or mail address. While this example
10 assumes operation in response to a first unanswered terminating
call, mail transmission may be triggered when a preset number
of unanswered terminating calls are placed. Setting so that
information is sent via mails to callers having the highest
priority to be reached alone can prevent transmission of
15 unnecessary mails.

In the seventh place, operation via facsimile in response
to an unanswered incoming call is explained referring to Fig.
4. In case the user of the portable telephone set does not
answer the incoming call, the facsimile number of the person
20 that attempted the unanswered call is identified based on the
calling number notice of the originator of the unanswered call.
Information in Fig. 2 is stored in the telephone number/e-mail
address storage means in the portable telephone set. In case
the number information of the distant party at call termination
25 is 03-333-3333, the corresponding facsimile number 03-333-3366

is acquired, to which a facsimile message is sent. The contents of the facsimile may be any message to the person that attempted call termination. For example, means for contact is reported such as the telephone number of another contact or mail address.

5 While this example assumes operation in response to a first unanswered terminating call, facsimile transmission may be triggered when a preset number of unanswered terminating calls are placed. Setting so that information is sent via facsimile to callers having the highest priority to be reached alone can
10 prevent transmission of unnecessary facsimiles.

As mentioned earlier, the embodiment of the invention allows conversation while connected to the internet, reading-off or facsimile transmission of received internet information, transmission of image information and audio
15 information around the portable telephone set to the internet, and notification of the mail address or facsimile number of the distant party of another contact, etc. in case a terminating call is not answered. This upgrades the operability of the portable telephone set equipped with the internet connection
20 function.

<Industrial Applicability>

As understood from the foregoing description, a portable telephone set according to the invention comprises internet
25 connection means, call means, call connection request

acceptance means, and control means for starting a call by controlling the call means depending on signals from the call connection request acceptance means indicating call termination or call origination during internet connection.

5 This configuration has an advantage that it is possible to make conversation while referring to or sending internet information.

10 A portable telephone set according to the invention comprises means for converting received internet information to a facsimile signal which is then output to an external component. This configuration has an advantage that it is possible to know an unanswered terminating call via the internet.

15 A portable telephone set according to the invention comprises means for automatically originating to a prespecified mail address in case an incoming call is not answered. This configuration has an advantage that it is possible to know the unanswered incoming call event via the internet.

20 A portable telephone set according to the invention comprises means for notifying the mail address of a person that has attempted the unanswered call of another contact used in case the incoming call to the portable telephone set is not answered. This configuration has an advantage that it is possible to send a mail that notifies the distant party of another contact in case a terminating call is not answered.

25 A portable telephone set according to the invention

comprises means for reading off internet information as a voice.
This configuration has an advantage that it is possible to hear
the acquired internet information as a voice.

A portable telephone set according to the invention
5 comprises timer means, image input means, voice input means,
and means for sending the information around the portable
telephone set to the internet every specific interval. This
configuration has an advantage that it is possible to cyclically
send information such as voices and images to the internet.

10 A portable telephone set according to the invention
comprises image input means, voice input means, and means for
sending information around the portable telephone set to the
internet according to a request from outside. This
configuration has an advantage that it is possible to send
15 information such as voices and images to the internet in response
to a request from outside.

A portable telephone set according to the invention
comprises means for sending via facsimile another contact used
in case a call is not answered by a portable telephone set to
20 the facsimile number of a person that has attempted the
unanswered call. This configuration has an advantage that it
is possible to notify the distant party of an unanswered
terminating call via facsimile.

Claims

1. A portable telephone set comprising:

internet connection means;

call means;

5 call connection request acceptance means; and

control means for starting a call by controlling said
call means depending on signals from said call connection request
acceptance means indicating call termination or call
origination during internet connection.

10

2. A portable telephone set according to claim 1,
further comprising means for converting received internet
information to a facsimile signal which is then output to an
external component.

15

3. A portable telephone set according to claim 1,
further comprising means for automatically originating to a
prespecified mail address in case an incoming call is not
answered.

20

4. A portable telephone set according to claim 1,
further comprising means for notifying the mail address of a
person that has attempted the unanswered call of another contact
used in case the incoming call to the portable telephone set

25 is not answered.

5. A portable telephone set according to claim 1, further comprising means for reading off internet information as a voice.

5

6. A portable telephone set according to claim 1, further comprising timer means, image input means, voice input means, and means for sending the information around the portable telephone set to the internet every specific interval.

10

7. A portable telephone set according to claim 1, further comprising image input means, voice input means, and means for sending information around the portable telephone set to the internet according to a request from outside.

15

8. A portable telephone set according to claim 1, further comprising means for sending via facsimile another contact used in case a call is not answered by a portable telephone set to the facsimile number of a person that has attempted the
20 unanswered call.

Abstract

The invention aims at upgrading the operability of a portable telephone set by providing a linkage between the telephone function and the internet connection function.

5 The invention provides call connection request acceptance means and system control means in a portable telephone set equipped with internet information transmission/reception means and call means to make possible conversation via a call during internet connection; output means to facsimile and
10 internet information storage means to allow internet information to be output to a facsimile; telephone number/e-mail address storage means to report an unanswered terminating call to a specified mail address; reading-off means to read off internet information as a voice; and timer means, image input
15 means and voice input means to send audio, image and/or video information cyclically or on demand.

FIG. 1

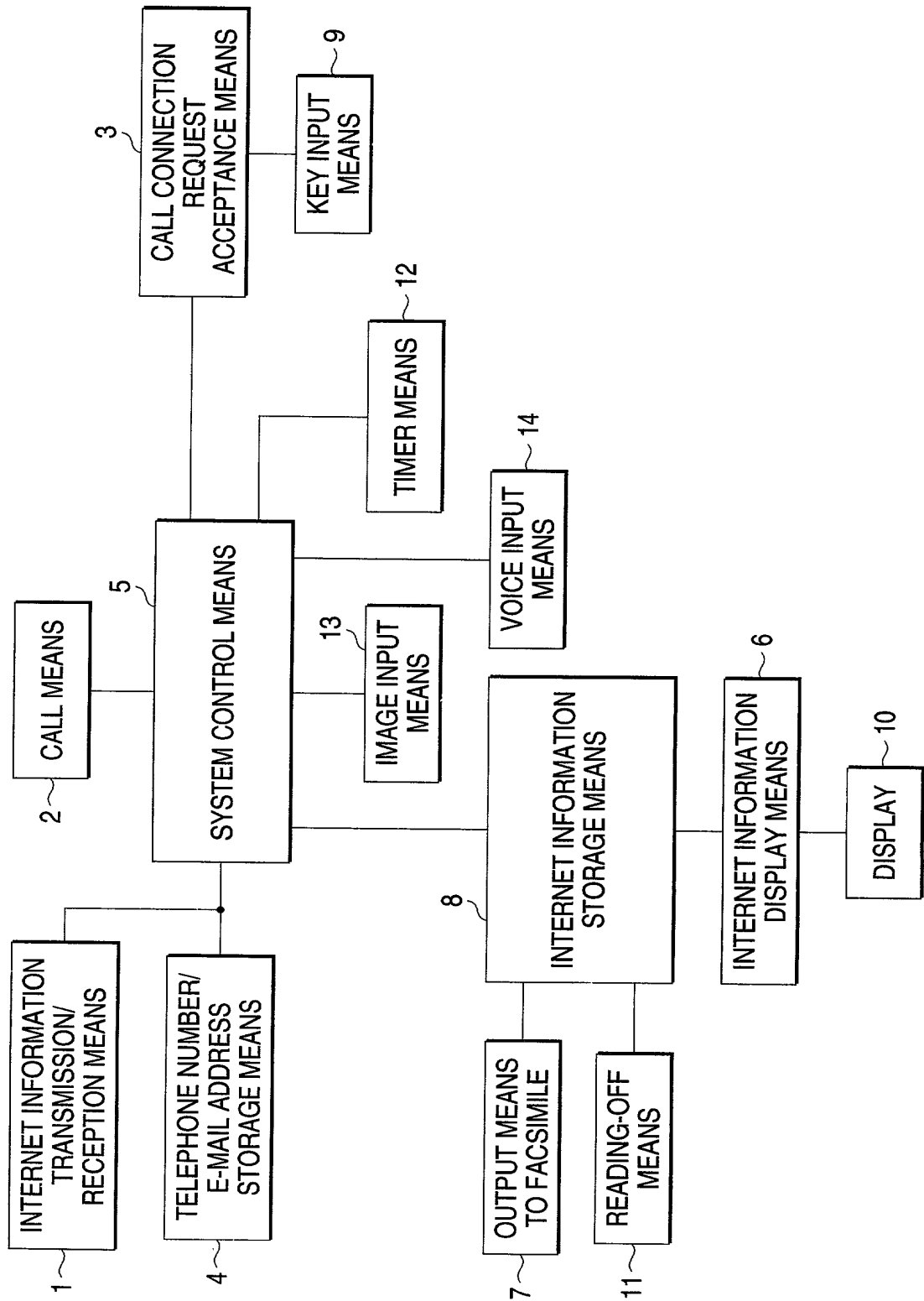


FIG. 2

NAME OF PERSON	ICHIRO YAMADA	JIRO TANAKA	SABURO SUZUKI
TELEPHONE NUMBER	03-333-3333	04-222-2222	05-111-1111
FACSIMILE NUMBER	03-333-3366	04-222-2277	05-111-1188
E-MAIL ADDRESS	yamada@kkk.jp	tanaka@aaa.jp	suzuki@bbb.jp
HOME PAGE ADDRESS	www.yamada.ac.jp	www.tanaka.ac.jp	www.suzuki.ac.jp

FIG. 3

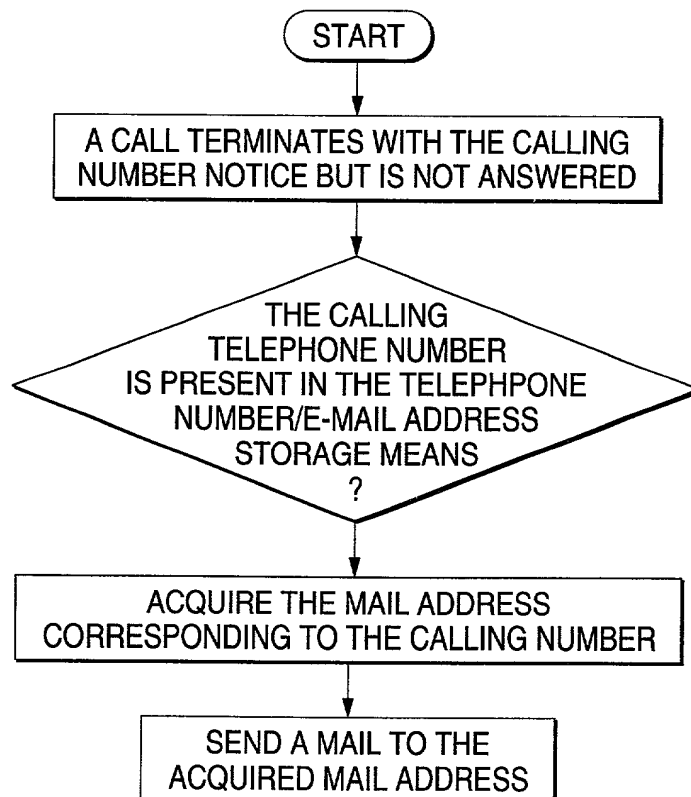
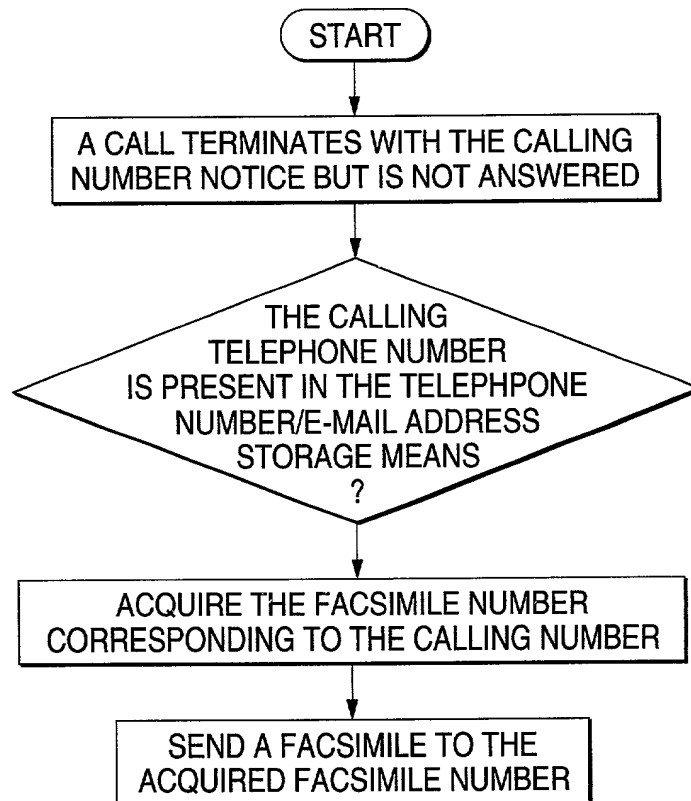


FIG. 4



DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION

☒ Submitted with Initial Filing

☐ Submitted after Initial Filing
(Surcharge (37 CFR 1.16(e)) required)

Attorney Docket No.: 33596

Application Number: _____

First Named Inventor: Tetsuro Otsubo

Filing Date: _____

Group Art Unit: _____

Examiner Name: _____

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PORTABLE TELEPHONE SET

the specification of which (check only one item below)

☐ is attached hereto,

OR

☒ was filed on September 13, 2000 as United States Application Number or PCT International Application Number PCT/JP00/06269 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d), or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed.

<u>Country</u>	<u>Prior Foreign Application Number(s)</u>	<u>Foreign Filing Date (MM/DD/YYYY)</u>	<u>Priority Claimed?</u>
Japan	P. Hei. 11-274331	September/28/1999	Yes

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

<u>Provisional Application Number(s)</u>	<u>Filing Date (MM/DD/YYYY)</u>
--	-------------------------------------

I hereby claim the benefit under 35 U.S.C. 120, of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>U.S. Parent Application or PCT Parent Number</u>	<u>Parent Filing Date (MM/DD/YYYY)</u>	<u>Parent Patent Number (if applicable)</u>
---	--	---

As a named inventor, I hereby appoint each of the following as my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Charles B. Gordon, Reg. No. 16923
Richard H. Dickinson, Jr., Reg. No. 18622
Thomas P. Schiller, Reg. No. 20677
David B. Deima, Reg. No. 22841
Joseph J. Corso, Reg. No. 25845
Howard G. Shimola, Reg. No. 26232

Jeffrey J. Sopko, Reg. No. 27676
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James M. Moore, Reg. No. 32923
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Michael W. Garvey, Reg. No. 35878
Aaron A. Fishman, Reg. No. 44682

Address all correspondence to Customer Number 116.

Please direct all correspondence and inquiries to David E. Spaw at (216) 579-1700.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Signature: Kazunori Maekawa

Date: May 14, 2001

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